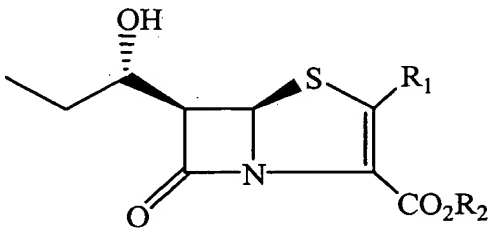
IN THE CLAIMS

Claim 1 (Previously Presented): A penem derivative represented by the following formula (I):



(I)

wherein R_1 represents a substituted or unsubstituted alkylthio group, a substituted or unsubstituted alkenylthio group, a substituted or unsubstituted aralkylthio group, a substituted or unsubstituted arylthio group, a substituted or unsubstituted heterocyclic thio group, a substituted or unsubstituted acylthio group, a mercapto group or a hydrogen atom, and R_2 represents a hydrogen atom or a carboxyl-protecting group; or a pharmacologically acceptable salt thereof.

Claim 2 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 1, wherein in the formula (I), R_1 represents a substituted or unsubstituted heterocyclic thio group.

Claim 3 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 2, wherein the heterocyclic group of said substituted or unsubstituted heterocyclic thio group is any one of the following substituted or unsubstituted groups (a) to (h):

(a) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms;

(b) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 5 nitrogen atoms;

(c) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms;

(d) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms;

(e) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms;

(f) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms;

(g) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms; and

(h) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing one sulfur atom.

Claim 4 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a pyrrolyl, pyrrolidinyl, imidazolyl, pyrazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazinyl, triazolyl, tetrazolyl, dihydrotriazinyl, azetidinyl, pyrrolidinyl, imidazolidinyl, piperidinyl, pyrazolidinyl or piperazinyl group.

Claim 5 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a pyrrolidinyl group.

Claim 6 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is an (S)-pyrrolidin-3-yl group.

Claim 7 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidinyl group.

Claim 8 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidin-4-yl group.

Claim 9 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidin-3-yl group.

Claim 10 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 5 nitrogen atoms and represented by (b) is an indolyl, isoindolyl, indolizinyl, benzimidazolyl, quinolyl, isoquinolyl, indazolyl, benzotriazolyl, tetrazolopyridyl, tetrazolopiridazinyl or dihydrotriazolopyridazinyl group.

Claim 11 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms and represented by (c) is an oxazolyl, isooxazolyl, oxadiazolyl or morpholinyl group.

Claim 12 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms and represented by (d) is a benzoxazolyl or benzoxadiazolyl group.

Claim 13 (Previously Presented): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms and represented by (e) is a 1,3-thiazolyl, 1,2-thiazolyl, thiazolinyl, thiadiazolyl or thiazolidinyl group.

Claim 14 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 7-12 membered, unsaturated, heteropolycyclic

group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms and represented by (f) is a benzothiazolyl or benzothiadiazolyl group.

Claim 15 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and represented by (g) is a furanyl, pyranyl, tetrahydrofuranyl or tetrahydropyranyl group.

Claim 16 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 3, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing one sulfur atom and represented by (h) is a thienyl or tetrahydrothienyl group.

Claim 17 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 1, wherein in the formula (I), R_1 represents a substituted or un substituted alkylthio group.

Claim 18 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 17, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a linear or branched lower alkyl group, or a monocyclic or polycyclic alkyl group which may be in the form of a fused ring with an aromatic hydrocarbon.

Claim 19 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 17, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a methyl, ethyl, n-propyl, isopropyl, n-butyl, tert-butyl or hexyl group.

Claim 20 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 17, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a monocyclic or polycyclic alkyl group selected from a cyclopentyl, cyclohexyl, menthyl, fenchyl, bornyl or indanyl group.

Claim 21 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim l, wherein in the formula (I), R_l represents a substituted or un substituted alkenylthio group.

Claim 22 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 21, wherein the alkenyl group of said substituted or unsubstituted alkenylthio group is a linear or branched, lower alkenyl group.

Claim 23 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 21, wherein the alkenyl group of said substituted or unsubstituted alkenylthio group is a vinyl, allyl, 2-chloroallyl, 1-propenyl, 2-butenyl or 2-methyl-2-propenyl group.

Claim 24 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 1, wherein in the formula (I), R_l represents a substituted or unsubstituted aralkylthio group.

Claim 25 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 24, wherein the aralkyl group of said substituted or unsubstituted aralkylthio group is an aralkyl group containing 7 to 24 carbon atoms.

Claim 26 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 24, wherein the aralkyl group of said substituted or unsubstituted aralkylthio group is a benzyl, phenethyl, 3-phenyl-propyl, 2-naphthylmethyl, 2-(1-naphthyl)ethyl, trityl or benzhydryl group.

Claim 27 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 1, wherein in the formula (I), R_1 represents a substituted or unsubstituted arylthio group.

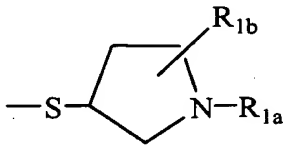
Claim 28 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 27, wherein the aryl group of said substituted or unsubstituted arylthio group is an aryl group containing 6 to 10 carbon atoms.

Claim 29 (Original): A penem derivative or a pharmacologically acceptable salt thereof according to claim 27, wherein the aryl group of said substituted or unsubstituted arylthio group is a phenyl, tolyl, xylyl, mesityl, cumenyl or naphthyl group.

Claims 30-31 (Cancelled).

Claim 32 (Currently Amended): A penem derivative or a pharmacologically acceptable salt thereof according to claim 1, wherein R_1 represents the following group (i) or (ii):

(i) a group represented by the following formula:



wherein R_{1a} and R_{1b} may be the same or different and represent a hydrogen atom, an alkyl group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino(amino):lower alkyl group, a carbamoyl group, a carbamoyl lower alkyl, group, an acyl group, an acyl lower alkyl group, carboxyl group, a heterocyclic group or a heterocyclic lower alkyl group; one or more hydrogen atoms of said alkyl, alkenyl, aralkyl, aryl, imino lower alkyl, imino lower alkyl amino, imino(amino) lower alkyl , carbamoyl, carbamoyl lower alkyl , heterocyclic or heterocyclic lower alkyl group may each be substituted by a halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, a lower alkylene acetal group, an alkyl group, an alkoxyl group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino-(amino) lower alkyl group, a carbamoyl group, a carbamoyloxy group, a carbamoyl lower alkyl group, a heterocyclic group, a heterocyclic lower alkyl group, an acyl group or an acylalkyl group; said acyl groups and the acyl group of said acyl lower

alkyl group represent an alkyl carbonyl, alkenylcarbonyl, aralkyl-carbonyl, arylcarbonyl, heterocyclic carbonyl or heterocyclic lower alkyl carbonyl group containing said substituted or unsubstituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said carboxyl group may be esterified by said substituted or unsubstituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said heterocyclic groups and the heterocyclic group of said heterocyclic lower alkyl group may each contain one or more carbonyl ~~group~~ groups in the rings thereof and the tertiary nitrogen atom thereof may form an in-tramolecular quaternary salt by the introduction of said substituent; and

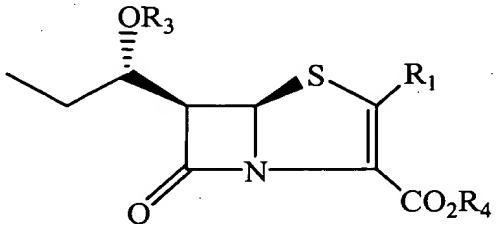
(ii) a group represented by the following formula:

$$-S-(CH_2)_n-R_{1c}$$

wherein n stands for 1 to 3; R_{1c} represents a hydrogen atom, an aryl group containing 6 to 10 carbon atoms, an amino group, an imino lower alkyl amino group, an aminosulfonyl group, carbamoyl group, acyl group, a carboxyl group or a heterocyclic group; one or more hydrogen atoms of said aryl, amino, imino lower alkyl-amino, aminosulfonyl, carbamoyl or heterocyclic group may each be substituted by a halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, an alkyl group, an alkoxy group, an alkenyl group, an aralkyl group containing 7 to 24 car-bon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino(amino) lower alkyl group, a carbamoyl group, a carbamoyloxy group, a carbamoyl lower alkyl group, a heterocyclic group, a heterocyclic lower alkyl group, an acyl group or a acylalkyl group; said acyl groups and the acyl group of said acylalkyl groups recited as a substituent represent an alkylcarbonyl, alkenylcarbonyl, aralkylcarbonyl, aryl-carbonyl, heterocyclic carbonyl or heterocyclic lower alkyl carbonyl group containing one or more alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl groups; one or

more hydrogen atoms of these acyl groups may each be substituted by a halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, a lower alkylene acetal group, an alkyl group, an alkoxy group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino(amino) lower alkyl group, carbamoyl group, a carbamoyloxy group, a carbamoyl lower alkyl group, a heterocyclic group, a heterocyclic lower alkyl group, an acyl group or an acylalkyl group; said carboxyl group may be esterified by a substituted or un-substituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said heterocyclic group and the heterocyclic group of said heterocyclic lower alkyl groups, the latter heterocyclic group being recited as a substituent, may each contain one or more carbonyl groups in the ring thereof and the tertiary nitrogen atom thereof may form an intramolecular quaternary salt by the introduction of said substituent.

Claim 33 (Previously Presented): A compound represented by the following formula (II):

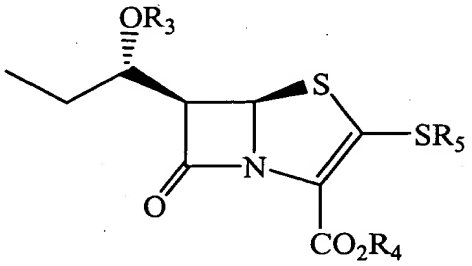


(II)

wherein R_1 represents a substituted or unsubstituted alkylthio group, a substituted or unsubstituted aralkylthio group, a substituted or unsubstituted alkenylthio group, a substituted or unsubstituted arylthio group, a substituted or unsubstituted heterocyclic thio group, a

substituted or unsubstituted acylthio group, a mercapto group or a hydrogen atom, OR_3 represents a protected hydroxyl group and R_4 represents a carboxyl-protecting group.

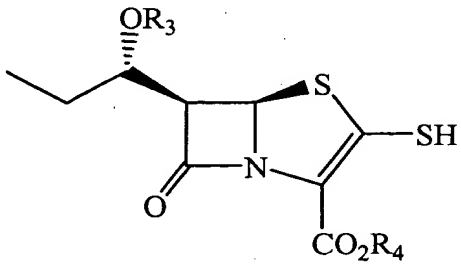
Claim 34 (Original): A compound represented by the following formula (III):



(III)

wherein R_5 represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, a substituted or unsubstituted heterocyclic group or a substituted or unsubstituted acyl group, OR_3 represents a protected hydroxyl group, and R_4 represents a carboxyl-protecting group.

Claim 35 (Original): A compound represented by the following formula (IV):

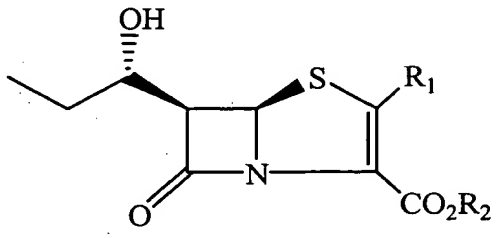


(IV)

wherein OR_3 represents a protected hydroxyl group and R_4 represents a carboxyl-protecting group.

Claim 36 (Cancelled).

Claim 37 (Original): An antibacterial agent comprising, as an active ingredient, a penem derivative represented by the following formula (I):



(I)

wherein R_1 represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, a substituted or unsubstituted alkylthio group, a substituted or unsubstituted alkenylthio group, a substituted or unsubstituted aralkylthio group, a substituted or unsubstituted arylthio group, a substituted or un-substituted heterocyclic group, a substituted or unsubstituted heterocyclic thio group, a substituted or unsubstituted acylthio group, a mercapto group or a hydrogen atom, and R_2 represents a hydrogen atom or a carboxyl-protecting group; or a pharmacologically acceptable salt thereof.

Claim 38 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 37, wherein in the formula (I), R_1 represents a substituted or unsubstituted heterocyclic thio group.

Claim 39 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 38, wherein the heterocyclic group of said substituted or unsubstituted heterocyclic thio group is any one of the following substituted or unsubstituted groups (a) to (h):

(a) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms;

(b) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 5 nitrogen atoms;

(c) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms;

(d) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms;

(e) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms;

(f) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms;

(g) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms; and

(h) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing one sulfur atom.

Claim 40 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a pyrrolyl, pyrrolidinyl, imidazolyl,

pyrazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazinyl, triazolyl, tetrazolyl, dihydrotriazinyl, azetidinyl, pyrrolidinyl, imidazolidinyl, piperidinyl, pyrazolidinyl or piperazinyl group.

Claim 41 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a pyrrolidinyl group.

Claim 42 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is an (S)-pyrrolidin-3-yl group.

Claim 43 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidinyl group.

Claim 44 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidin-4-yl group.

Claim 45 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to

claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidin-3-yl group.

Claim 46 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 5 nitrogen atoms and represented by (b) is an indolyl, isoindolyl, indolizinyl, benzimidazolyl, quinolyl, isoquinolyl, indazolyl, benzotriazolyl, tetrazolopyridyl, tetrazolopiridazinyl or dihydrotriazolopyridazinyl group.

Claim 47 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms and represented by (c) is an oxazolyl, isooxazolyl, oxadiazolyl or morpholinyl group.

Claim 48 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms and represented by (d) is a benzoxazolyl or benzoxadiazolyl group.

Claim 49 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group

containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms and represented by (e) is a 1,3-thiazolyl, 1,2-thiazolyl, thiazolinyl, thiadiazolyl or thiazolidinyl group.

Claim 50 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms and represented by (f) is a benzothiazolyl or benzothiadiazolyl group.

Claim 51 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and represented by (g) is a furanyl, pyranyl, tetrahydropuranyl or tetrahydropyranyl group.

Claim 52 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 39, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing one sulfur atom and represented by (h) is a thienyl or tetrahydrothienyl group.

Claim 53 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 37, wherein in the formula (I), R_1 represents a substituted or unsubstituted alkylthio group.

Claim 54 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 53, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a linear or branched lower alkyl group, or a monocyclic or polycyclic alkyl group which may be in the form of a fused ring with an aromatic hydrocarbon.

Claim 55 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 53, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a methyl, ethyl, n-propyl, isopropyl, n-butyl, tert-butyl or hexyl group.

Claim 56 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 53, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a monocyclic or polycyclic alkyl group selected from a cyclopentyl, cyclohexyl, menthyl, fenchyl, bornyl or indanyl group.

Claim 57 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 37, wherein in the formula (I), R_1 represents a substituted or unsubstituted alkenylthio group.

Claim 58 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to

claim 57, wherein the alkenyl group of said substituted or unsubstituted alkenylthio group is a linear or branched, lower alkenyl group.

Claim 59 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or pharmacologically acceptable salt thereof according to claim 57, wherein the alkenyl group of said substituted or unsubstituted alkenylthio group is a vinyl, allyl, 2-chloroallyl, 1-propenyl, 2-butenyl or 2-methyl-2-propenyl group.

Claim 60 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 37, wherein in the formula (I), R_1 represents a substituted or unsubstituted aralkylthio group.

Claim 61 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 60, wherein the aralkyl group of said substituted or unsubstituted aralkylthio group is an aralkyl group containing 7 to 24 carbon atoms.

Claim 62 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 60, wherein the aralkyl group of said substituted or unsubstituted aralkylthio group is a benzyl, phenethyl, 3-phenyl-propyl, 2-naphthylmethyl, 2-(1-naphthyl)ethyl, trityl or benzhydryl group.

Claim 63 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 37, wherein in the formula (I), R_1 represents a substituted or unsubstituted arylthio group.

Claim 64 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 63, wherein the aryl group of said substituted or unsubstituted arylthio group is an aryl group containing 6 to 10 carbon atoms.

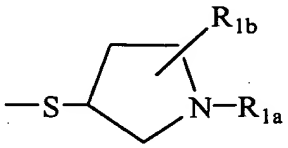
Claim 65 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 63, wherein the aryl group of said substituted or unsubstituted arylthio group is a phenyl, tolyl, xylyl, mesityl, cumenyl or naphthyl group.

Claim 66 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 37, wherein in the formula (I), R_1 represents a substituted or unsubstituted aryl group.

Claim 67 (Previously Presented): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 37, wherein in the formula (I), R_1 represents a substituted or unsubstituted heterocyclic group.

Claim 68 (Currently Amended): An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim 37, wherein R_1 represents the following group (i) or (ii):

(i) a group represented by the following formula:



wherein R_{1a} and R_{1b} may be the same or different and represent a hydrogen atom, an alkyl group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino(amino) lower alkyl group, a ~~carbamonyl~~ carbamoyl group, a carbamoyl lower alkyl group, an acyl group, an acyl lower alkyl group, carboxyl group, a heterocyclic group or a heterocyclic lower alkyl group; one or more hydrogen atoms of said alkyl, alkenyl, aralkyl, aryl, imino lower alkyl, imino lower alkyl amino, imino(amino) lower alkyl, carbamoyl, carbamoyl lower alkyl, heterocyclic or heterocyclic lower alkyl group may each be substituted by a halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, a lower alkylene acetal group, an alkyl group, an alkoxyl group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino (amino) lower alkyl group, a carbamoyl group, a carbamoyloxy group, a carbamoyl lower alkyl group, a heterocyclic group, a heterocyclic lower alkyl group, an acyl group or an acylalkyl group; said acyl groups and the acyl group of said acyl lower alkyl group represent an alkyl carbonyl, alkenylcarbonyl, aralkyl carbonyl, arylcarbonyl,

heterocyclic carbonyl or heterocyclic lower alkyl carbonyl group containing said substituted or unsubstituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said carboxyl group may be esterified by said substituted or unsubstituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said heterocyclic groups and the heterocyclic group of said heterocyclic lower alkyl group may each contain one or more carbonyl ~~group~~ groups in the rings thereof and the tertiary nitrogen atom thereof may form an intramolecular quaternary salt by the introduction of said substituent; and

(ii) a group represented by the following formula:

$$-S-(CH_2)_n-R_{1c}$$

wherein n stands for 1 to 3; R_{1c} represents a hydrogen atom, an aryl group containing 6 to 10 carbon atoms, an amino group, an imino lower alkyl amino group, an aminosulfonyl group, carbamoyl group, acyl group, a carboxyl group or a heterocyclic group; one or more hydrogen atoms of said aryl, amino, imino lower alkyl amino, aminosulfonyl, carbamoyl or heterocyclic group may each be substituted by a halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, an alkyl group, an alkoxy group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino (amino) lower alkyl group, a carbamoyl group, a carbamoyloxy group, a carbamoyl lower alkyl group, a heterocyclic group, a hetero-cyclic lower alkyl group, an acyl group or a acylalkyl group; said acyl groups and the acyl group of said acylalkyl groups recited as a substituent represent an alkylcarbonyl, alkenylcarbonyl, aralkylcarbonyl, arylcarbonyl, heterocyclic carbonyl or heterocyclic lower alkyl carbonyl group containing one or more alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl groups; one or more hydrogen atoms of these acyl groups may each be substituted by a

halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, a lower alkylene acetal group, an alkyl group, an alkoxy group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino (amino) lower alkyl group, carbamoyl group, a carbamoyloxy group, a carbamoyl lower alkyl group, a heterocyclic group, a heterocyclic lower alkyl group, an acyl group or an acylalkyl group; said carboxyl group may be esterified by a substituted or unsubstituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said heterocyclic group and the heterocyclic group of said heterocyclic lower alkyl groups, the latter heterocyclic group being recited as a substituent, may each contain one or more carbonyl groups in the ring thereof and the tertiary nitrogen atom thereof may form an intramolecular quaternary salt by the introduction of said substituent.

DISCUSSION OF THE AMENDMENT

Claims 32 and 68 have been amended to correct a typographical error. Claim 68 has additionally been amended to correct a spelling error.

No new matter has been added by the above amendment. Claims 1-29, 32-35 and 37-68 remain pending.